IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:
Richard D. Dettinger et al.

Serial No.: 10/677,472

Confirmation No.: 8488

Filed: October 2, 2003

For: DYNAMIC QUERY BUILDING BASED ON THE DESIRED NUMBER OF RESULTS

Group Art Unit: 2168

Examiner: Jay A. Morrison

MAIL STOP APPEAL BRIEF - PATENTS
Commissioner for Patents
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June 11, 2007 /Joseph Jong/
Date Joseph Jong

Dear Sir:

APPEAL BRIEF

Applicants submit this Appeal Brief to the Board of Patent Appeals and Interferences on appeal from the decision of the Examiner of Group Art Unit 2168 dated January 11, 2007, finally rejecting claims 1-45. The final rejection of claims 1-45 is appealed. This Appeal Brief is believed to be timely since it is facsimile transmitted by the due date of June 11, 2007, as set by the filing of a Notice of Appeal on April 11, 2007. Please charge the fee of $500.00 for filing this brief to Deposit Account No. 09-0465/ROC920030173US1.

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Real Party in Interest

The present application has been assigned to International Business Machines Corporation, Armonk, New York.

Related Appeals and Interferences

Applicant asserts that no other appeals or interferences are known to the Applicant, the Applicant's legal representative, or assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

Status of Claims

Claims 1-45 are pending in the application. Claims 1-45 were originally presented in the application. Claims 1-45 stand finally rejected as discussed below. The final rejections of claims 1-45 are appealed. The pending claims are shown in the attached Claims Appendix.

Status of Amendments

All claim amendments have been entered by the Examiner, including amendments to the claims proposed after the final rejection

Summary of Claimed Subject Matter

A. CLAIM 1 - INDEPENDENT

Claim 1 recites a computer-implemented method of using a logical model to query physical fields of physical data entities, where the logical model is stored in physical storage space and consists of logical fields representative of the physical fields. See *Application*, page 3: lines 22-25; Figure 1, items 134 and 148; Figure 2A, 214; Figure 2B, 212. Furthermore, each logical field is defined by the logical model to include an access method describing a manner of accessing the corresponding respective physical field. See 13: 22-28; Figure 2B, 212.

The method also includes providing a runtime component stored in physical storage space and configured to change at least one element of an abstract query to produce a modified abstract query which, when executed in the form of a transformed physical query, returns results. See 3: 25-28; 25: 20-24; 28: 6-16; Figure 2A, 150; Figure 5, 510; Figure 7, 700. The modifying performed by the runtime component on the abstract query is directed to satisfying a result set criterion with the returned results. See 3: 25-28; 25: 19-24; 28: 4-16; Figures 5, 508; Figure 7, 508.

The method also includes defining the abstract query with respect to at least one logical field of the logical model, where each logical field contains at least one specified value. See 3: 28-30; 13: 19-23; Table I; Figure 2B, 202, 204, 210. Likewise, the modified abstract query is also defined with respect to at least one logical field, and the transformed physical query references at least one physical field and corresponding logical fields. See 3: 26-30; 21: 10-16; 19: 25-30, 19: 1-2; 25: 20-24. Table III; Figure 2A, 150; Figure 5, 506, 510.

B. CLAIM 12 - INDEPENDENT

Claim 12 recites a computer-implemented method of returning a desired result set for a query against a database; the database is represented by a data model comprising logical fields representative of physical fields of the database, and each logical field has an associated modification parameter. See *Application*, 4:1-5; 21: 10-13; Figure 1, items 148 and 214; Figure 5; Figure 6. In addition, as claimed, each logical field is defined by the logical model to include an access method describing a manner of accessing the corresponding respective physical field. See 13: 22-28; Figure 2B, 212, Figure 3, 308.

The method also includes receiving an abstract query that includes a result set criterion and selection criterion, then modifying the abstract query based on the modification parameter underlying the selection criterion to satisfy the result criterion. See 4:5-10; 16: 19-28; 25: 28-30, 26: 1-2; Figure 6, 504, 602, 604.

C. CLAIM 19 – INDEPENDENT

Claim 19 recites a computer-implemented method of building queries based on a logical model that is stored in physical storage space, where the logical model consists of logical fields representative of the physical fields. See *Application*, 4: 12-15; Figure 1, items 134 and 148; Figure 2A, 214; Figure 2B, 212. Furthermore, each logical field is defined by the logical model to include an access method describing a manner of accessing the corresponding respective physical field. See 13: 22-28; Figure 2B, 212.

The method also includes receiving an abstract query that includes at least one logical field with a user defined value and a result criterion specifying, at least, the size of the result set; then programmatically modifying an element of the abstract query based on the modification parameter underlying the selection criterion to produce a modified abstract query satisfying the result criterion. See 4:15-18; 16: 19-28; 24: 9-11; 25: 16-20, 28-30, 26: 1-2; Figure 5, 504, 508; Figure 6, 504, 602, 604.

D. CLAIM 26 – INDEPENDENT

Claim 26 recites a computer-implemented method for returning a specified result size set for a query, where the query comprises at least one condition, an associated value for the condition and a user-specified result criterion. See *Application*, 4:22-25; 16: 19-28; 24: 9-11; 28: 4-7; Figure 7, 700, 712. The claim further recites iteratively modifying either or both a first and second element of the query until the resultant modified query produces a result set that satisfies the user-specified result criterion. See 4: 35-30; 25: 26-30, 26: 1-11; 28: 6-16; Figure 6, Figure 7.

E. CLAIM 33 – INDEPENDENT

Claim 33 recites a computer readable storage medium containing a program configured to perform an operation with respect to abstract queries and a logical model consisting of logical fields representative of the physical fields of physical data. See *Application*, 5: 1-4; Figure 1, 146, 150. As claimed, operations of the program consist of receiving an abstract query defined with respect to at least one logical field of the logical model, user-specified values for the defined logical fields, and a result set criterion specifying at least a size of a desired result set. See 5: 4-7; 12: 28-31; 16: 19-28; 24: 9-11; 28: 4-7; Figure 2B, 202, 204; Figure 7, 700, 712.

This operation also includes manipulating an element of the abstract query to produce a modified abstract query which, when executed in the form of a transformed physical query, returns results. See 25: 20-24; 28: 6-16; Figure 2A, 150; Figure 5, 510; Figure 7, 700. The manipulation performed to modify the abstract query is directed to satisfying a result set criterion with the returned results. See 25: 19-24; 28: 4-16; Figures 5, 508; Figure 7, 508. The abstract query is defined with respect to at least one logical field of the logical model, where each logical field contains at least one specified value. See 13: 19-23; Table I; Figure 2B, 202, 204, 210. Likewise, the modified abstract query is also defined with respect to at least one logical field, and the transformed physical query references at least one physical field and corresponding logical fields. See 21: 10-16; 19: 25-30, 19: 1-2; 25: 20-24. Table III; Figure 5, 506, 510.

In addition, as claimed, each logical field is defined by the logical model to include an access method describing a manner of accessing the corresponding respective physical field. See 13: 22-28; Figure 2B, 212, Figure 3, 308.

F. CLAIM 42 – INDEPENDENT

Claim 42 recites a computer system that includes at least one processor, a runtime component, and physical storage that stores a logical model consisting of a plurality of logical field definitions mapping to physical fields of physical entities of data. See *Application*, 5: 11-13; Figure 1, items 134, 150, and 148; Figure 2A, 214; Figure 2B, 212. In addition, as claimed, each logical field definition references an access method describing a manner of accessing a respective physical field, whereby the logical model provides a logical view of the data. See 13: 22-28; Figure 2B, 212.

As claimed, the runtime component, when executed by the processor, is configured to receive an abstract query that includes logical fields with user defined values and a result criterion specifying, at least, the size of the result set; then programmatically modifying an element of the abstract query based on the modification parameter underlying the selection criterion to produce a modified abstract query satisfying the result criterion. See 16: 19-28; 24: 9-11; 25: 16-20, 28-30, 26: 1-2; Figure 1, 150; Figure 5, 504, 508; Figure 6, 504, 602, 604.

Grounds of Rejection to be Reviewed on Appeal

1. Rejection of claims 1-45 under 35 U.S.C. § 103(a) as being unpatentable over *Olson et al.,* (U.S. Pub No. 2001/0016843) (hereinafter *Olson*) in view of *Chu et al.*, (U.S. Pat. No. 5,959,707) (hereinafter *Chu*).

ARGUMENTS

Rejection of claims 1-45 under 35 U.S.C. § 103(a) as being unpatentable over *Olson* in view of *Chu.*

The Examiner bears the initial burden of establishing a *prima facie* case of obviousness. *See* MPEP § 2142. To establish a *prima facie* case of obviousness three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one ordinary skill in the art to modify the reference or to combine the reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *See* MPEP § 2143. The present rejection fails to establish at least the third criterion.

Claims 1, 12, 19, 33, and 42 Are Not Obvious under 35 U.S.C. § 103(a) over *Olson* in view of *Chu*

Olson, in view of *Chu*, does not disclose a method that includes the steps of (i) providing a logical model stored in physical storage space and logically describing the physical fields, the logical model comprising logical fields corresponding to respective physical fields, (ii) wherein each logical field is defined by the logical model to include an access method describing a manner of accessing the corresponding respective physical field, (iii) providing a runtime component stored in physical storage space and configured to change at least one element of an abstract query to produce a modified abstract query which, when executed in the form of a transformed physical query, returns results, the modifying being directed to satisfying a result set criterion with the returned results (iv) the abstract query is defined with respect to at least one logical field of the logical model and wherein at least one value is specified for the at least one logical field, (v) the modified abstract query is defined with respect to the at least one logical field, (vi) the transformed physical query includes a reference to a physical field of at least one of the physical fields, the physical field corresponding to the at least one logical field, as recited by claim 1. Claims 12, 19, 33, and 42 recite similar limitations.

The Examiner maintains that *Olson* teaches "providing a logical model stored in physical storage space and logically describing the physical fields, the logical model comprising logical fields corresponding to respective physical fields" at paragraph [0082]. However, paragraph [0082] is directed towards using binding plans to map a virtual source and a physical source. Respectfully, the Examiner wrongly equates the binding plans of *Olson* with the logical models in the present application. A binding plan consists of source binding, where source binding consists of mapping a virtual source and a physical source, such that every column in the former is mapped to some column in the latter. *See Olson*, paragraph [0082].

To elaborate, the binding plan taught by *Olson* consists of merely a mapping of columns. In contrast, a logical model does not map columns. Instead, a logical model filters physical source columns and exposes a new, abstract column that is constructed according to the relevant abstraction model. Thus, while the new column constructed by the logical model does have some underlying relationship to the physical source, as it made use of the physical source, it is not simply a mapping relationship.

In this regard, the Examiner maintains that *Olson* teaches "wherein each logical field is defined by the logical model to include an access method describing a manner of accessing the corresponding respective physical field" at paragraph [0083]. However, paragraph [0083] is directed to executing queries in the context of a binding plan. Again, use of binding plans is not the same as use of a logical field, defined by a logical model to include an access method, to describe a manner of accessing the corresponding respective physical field. The binding plans of *Olsen* simply do not include logical field definitions for corresponding physical fields, where ***each* logical field definition** includes an **access method describing how to access the corresponding physical field**. The provision of an access method for each of a plurality of logical field definitions allows different logical fields to expose data differently. See, Applicants' Application Figure 2B, logical fields 208_1 (simple access method), 208_3 (filtered access method) and 208_4 (composed access method). The simple binding plans of *Olsen* provide no such functionality. Accordingly, withdrawal of this rejection is respectfully requested.

The Examiner further maintains that *Olson* teaches “wherein the abstract query is defined with respect to at least one logical field of the logical model and wherein at least one value is specified for the at least one logical field” at paragraph [0082]. However, paragraph [0082] is directed towards using binding plans to map a virtual source and a physical source. Again, binding plans are distinct from the claimed logical models. Consequently, *Olson* does not teach, show or suggest defining an abstract query with respect to at least one logical field of a logical model. Instead, *Olson* teaches executing queries in the context of a binding plan. *See Olson*, paragraph [0083]. *Olson* uses this binding plan to manage, extract, and display information from multiple data sources. See *Olson*, paragraph [0002]. Therefore, Applicants respectfully submit that *Olson* does not teach “wherein the abstract query is defined with respect to at least one logical field of the logical model and wherein at least one value is specified for the at least one logical field”. Accordingly, withdrawal of this rejection is respectfully requested.

The Examiner further maintains that *Olson* teaches “wherein the modified abstract query is defined with respect to the at least one logical field” at paragraph [0082]. First, *Olson* does not teach modifying abstract queries. Second, *Olson* does not teach defining queries with respect to logical fields. Instead, *Olson* teaches executing queries in the context of binding plans; even assuming, *arguendo*, that the queries are abstract, there is no mention of modifying them. *See Olson*, paragraphs [0082]-[0083]. Therefore, Applicants respectfully submit that *Olson* does not teach “wherein the modified abstract query is defined with respect to the at least one logical field.” Accordingly, withdrawal of this rejection is respectfully requested.

Additionally, the Examiner maintains that *Olson* teaches that “the transformed physical query includes a reference to a physical field of at least one of the physical fields, the physical field corresponding to the at least one logical field” at paragraph [0082]. However, *Olson* does not teach transforming physical queries. Additionally, *Olson* does not teach referencing physical queries, transformed or otherwise, to at least one physical field which corresponds to at least one logical field. As noted above, paragraph [0082] is directed to a binding plan, a mere mapping of columns between a virtual source and a physical source. Therefore, Applicants respectfully submit that *Olson* does not teach that "the transformed physical query includes a reference to a physical field of at least one of the physical fields, the physical field corresponding to the at least one logical field." Accordingly, withdrawal of this rejection is respectfully requested.

Finally, the Examiner maintains that *Chu* teaches "providing a runtime component stored in physical storage space and configured to change at least one element of an abstract query to produce a modified abstract query which, when executed in the form of a transformed physical query, returns results, the modifying being directed to satisfying a result set criterion with the returned results" at column 4, lines 36-43. However, column 4, lines 36-43 teaches using a Type Abstraction Hierarchy structure to relax the conditions of one or more attributes. Relaxing consists of lessening the restriction on a query to return more results. *See Chu*, column 1, lines 26-33. This relaxation method (by definition) is not capable of further restricting a query in the case that too many results are returned, which is a necessity in modifying abstract queries to satisfy a result set criterion. *Chu* only teaches increasing the number of returned results. Therefore, *Chu* is incapable of decreasing the number of returned results. Therefore, Applicants respectfully submit that *Chu* does not teach "providing a runtime component stored in physical storage space and configured to change at least one element of an abstract query to produce a modified abstract query which, when executed in the form of a transformed physical query, returns results, the modifying being directed to satisfying a result set criterion with the returned results." Accordingly, withdrawal of this rejection is respectfully requested.

Claims 2-11 Are Not Obvious under 35 U.S.C. § 103(a) over *Olson* in view *Chu*

Claims 2-11 depend from independent claim 1, and are therefore believed to be allowable for the reasons provided above. Accordingly, withdrawal of this rejection is respectfully requested.

Claims 12, 19, and 33 Are Not Obvious under 35 U.S.C. § 103(a) over *Olson* in view of *Chu*

The Examiner maintains that *Olson* teaches "the logical model comprising logical fields corresponding to respective physical fields and each having an associated modification parameter" at paragraph [0080]. However, paragraph [0080] is in fact directed towards using one "logical" query in place of using several isomorphic queries. That is in no way related to using a logical model comprising logical fields, each having an associated modification parameter. Additionally, nowhere in *Olson* is an associated modification parameter taught. Therefore, Applicants respectfully submit that *Olson* does not teach, show or suggest a "logical model comprising logical fields corresponding to respective physical fields and each having an associated modification parameter." Accordingly, withdrawal of this rejection is respectfully requested.

Additionally, the Examiner maintains that *Olson* teaches "receiving an abstract query comprising a result set criterion and selection criterion comprising at least one of the logical fields of the logical model" at paragraph [0080]. As discussed above, paragraph [0080] teaches using one "logical" query in place of using several isomorphic queries. Nowhere does *Olson* teach using an abstract query to meet a result set criterion. *Olson* teaches a system for accessing data from multiple sources. *See Olson*, paragraph [0002]. *Olson* does not teach using abstract queries composing a result set criterion. Therefore, *Olson* does not teach "receiving an abstract query comprising a result set criterion and selection criterion comprising at least one of the logical fields of the logical model." Accordingly, withdrawal of this rejection is respectfully requested.

Furthermore, the Examiner maintains that *Chu* teaches "manipulating the abstract query to produce a modified abstract query which, when executed, returns results; wherein the manipulating is, at least in part, defined by the modification parameter" at column 4, lines 36-43. As discussed above, column 4, lines 36-43 is directed to using a Type Abstraction Hierarchy structure to relax the conditions of one or more attributes. *Chu* only teaches relaxing query conditions; it does not teach further restriction of query conditions. Therefore, *Chu* does not teach, show or suggest manipulating the abstract query to produce a modified abstract query which, when executed, returns results; wherein the manipulating is, at least in part, defined by the modification parameter. Accordingly, withdrawal of this rejection is respectfully requested.

Claims 13-18 Are Not Obvious under 35 U.S.C. § 103(a) over *Olson* in view *Chu*

Claims 13-18 depend from independent claim 12, and are therefore believed to be allowable for the reasons provided above. Accordingly, withdrawal of this rejection is respectfully requested.

Claims 19 and 33 Are Not Obvious under 35 U.S.C. § 103(a) over *Olson* in view of *Chu*

The Examiner maintains that *Chu* teaches "programmatically manipulating an element of the abstract query to produce a modified abstract query which, when executed, returns results; the manipulating being directed to satisfying the result set criterion with the returned results" at column 4, lines 36-43. However, column 4, lines 36-43 do not teach returning a smaller result set. Furthermore, the Examiner maintains that *Chu* teaches "a result set criterion specifying at least a size of a desired result set" at column 1, lines 25-27 and column 6, line 14. However, Column 1, lines 25-27 is directed to only relaxing the query condition, *i.e.* increasing the result set. And column 6, line 14 is directed toward returning at least N results. *Chu* does not teach restricting the result set to conform with a maximum desired result set. Because the ability to increase or decrease the result set is required to return the desired result set, *Chu* does not teach the claim limitation. Therefore, *Chu* does not teach "a result set criterion specifying at least a size of a desired result set; and programmatically manipulating an element of the abstract query to produce a modified abstract query which, when executed, returns results; the manipulating being directed to satisfying the result set criterion with the returned results." Accordingly, withdrawal of this rejection is respectfully requested.

Claims 20-25 Are Not Obvious under 35 U.S.C. § 103(a) over *Olson* in view *Chu*

Claims 20-25 depend from independent claim 19, and are therefore believed to be allowable for the reasons provided above. Accordingly, withdrawal of this rejection is respectfully requested.

Claim 26 Is Not Obvious under 35 U.S.C. § 103(a) over *Olson* in view of *Chu*

The Examiner maintains that *Olson* teaches "changing a first element of the query to produce a modified query" at paragraph [0080]. Paragraph [0080] is directed towards using one "logical" query in place of using several isomorphic queries. Using one "logical" query in place of using several isomorphic queries is in no way modifying a query. The "logical' query is merely the logical equivalent of the isomorphic queries, not a modified form of isomorphic queries. Therefore, *Olson* does not teach "changing a first element of the query to produce a modified query." Accordingly, withdrawal of this rejection is respectfully requested.

Additionally, the Examiner maintains that *Chu* teaches that "the user-specified result criterion specifies a number of modified queries to be generated by changing the first or second element" at column 1, lines 25-27 and column 6, line 14. These citations, as discussed above, are directed to relaxing query conditions and returning at least N results, respectively. Neither citation is directed to specifying a number of modified queries to be generated. Specifically, column 1, lines 25-27 only teaches that attributes of a query can be relaxed, it does not teach how many modified queries can be generated. Although *Chu* does teach relaxing attributes within a certain range of values, it does not teach modifying multiple queries. *See Chu*, column 6, lines 10-11. Respectfully, *Chu* does not teach "the user-specified result criterion specifies a number of modified queries to be generated by changing the first or second element." Accordingly, withdrawal of this rejection is respectfully requested.

Claims 27-32 Are Not Obvious under 35 U.S.C. § 103(a) over *Olson* in view *Chu*

Claims 27-32 depend from independent claim 26, and are therefore believed to be allowable for the reasons provided above. Accordingly, withdrawal of this rejection is respectfully requested.

Claims 34-41 Are Not Obvious under 35 U.S.C. § 103(a) over *Olson* in view *Chu*

Claims 34-41 depend from independent claim 33, and are therefore believed to be allowable for the reasons provided above. Accordingly, withdrawal of this rejection is respectfully requested.

Claims 43-45 Are Not Obvious under 35 U.S.C. § 103(a) over *Olson* in view *Chu*

Claims 43-45 depend from independent claim 42, and are therefore believed to be allowable for the reasons provided above. Accordingly, withdrawal of this rejection is respectfully requested.

Accordingly, based on the foregoing, Applicants submit that *Olson* in view of *Chu* does not render obvious claims 1, 12, 19, 26, 33, and 42. Therefore, Applicants respectfully request that this rejection be withdrawn.

CONCLUSION

The Examiner errs in finding that claims 1-45 are unpatentable over *Olson* in view of *Chu* under 35 U.S.C. § 103(a).

Withdrawal of the rejections and allowance of all claims is respectfully requested.

Respectfully submitted, and
S-signed pursuant to 37 CFR 1.4,

/Gero G. McClellan, Reg. No. 44,227/

Gero G. McClellan
Registration No. 44,227
Patterson & Sheridan, L.L.P.
3040 Post Oak Blvd. Suite 1500
Houston, TX 77056
Telephone: (713) 623-4844
Facsimile: (713) 623-4846
Attorney for Appellant(s)

CLAIMS APPENDIX

1. (Previously Presented) A computer-implemented method of using a logical model to query physical fields of physical data entities, comprising:

providing a logical model stored in physical storage space and logically describing the physical fields, the logical model comprising logical fields corresponding to respective physical fields, and wherein each logical field is defined by the logical model to include an access method describing a manner of accessing the corresponding respective physical field; and

providing a runtime component stored in physical storage space and configured to change at least one element of an abstract query to produce a modified abstract query which, when executed in the form of a transformed physical query, returns results, the modifying being directed to satisfying a result set criterion with the returned results; wherein the abstract query is defined with respect to at least one logical field of the logical model and wherein at least one value is specified for the at least one logical field; wherein the modified abstract query is defined with respect to the at least one logical field; and wherein the transformed physical query includes a reference to a physical field of at least one of the physical fields, the physical field corresponding to the at least one logical field.

2. (Previously Presented) The method of claim 1, wherein the at least element is the at least value and further comprising changing, by the runtime component, the at least one value by increasing or decreasing the value.

3. (Previously Presented) The method of claim 1, further comprising changing, by the runtime component, the at least one element by removing the at least element from the abstract query.

4. (Previously Presented) The method of claim 1, further comprising changing, by the runtime component, the at least one element with respect to a weight assigned to

the at least element, the weight indicating a relative priority of changing the at least element relative to other elements in the abstract query.

5. (Original) The method of claim 1, wherein the at least one logical field of the logical model has an associated element modification parameter defining a parameter for changing, by the runtime component, the at least one element.

6. (Previously Presented) The method of claim 1, wherein the at least one logical field of the logical model has an associated element modification attribute indicating that the at least element specified in the abstract query for the at least one logical field may be modified by the runtime component.

7. (Original) The method of claim 1, wherein the at least one element is user-defined.

8. (Original) The method of claim 1, wherein the abstract query, including the result set criterion, is user-defined.

9. (Original) The method of claim 1, wherein the physical data entities comprise a plurality of tables in a database.

10. (Previously Presented) The method of claim 1, wherein the result set criterion is part of the abstract query.

11. (Previously Presented) The method of claim 1, further comprising transforming, by the runtime component, and with reference to the logical model, the abstract query into the physical query.

12. (Previously Presented) A computer-implemented method of returning a desired result set for a query, comprising:

providing a logical model stored in physical storage space and logically describing physical fields of physical data entities, the logical model comprising logical fields corresponding to respective physical fields and each having an associated modification parameter, and wherein each logical field is defined by the logical model to include an access method describing a manner of accessing the corresponding respective physical field;

receiving an abstract query comprising a result set criterion and selection criterion comprising at least one of the logical fields of the logical model; and

manipulating the abstract query to produce a modified abstract query which, when executed, returns results; wherein the manipulating is, at least in part, defined by the modification parameter associated with the at least one of the logical fields of the selection criterion and is directed toward satisfying the result set criterion.

13. (Previously Presented) The method of claim 12, further comprising iteratively performing the manipulating until the returned results satisfy the result set criterion.

14. (Original) The method of claim 12, wherein the result set criterion comprises a result set size specification.

15. (Original) The method of claim 12, wherein the selection criterion comprises a specified value for the at least one of the logical fields of the selection criterion and wherein manipulating the abstract query comprises manipulating the specified value.

16. (Previously Presented) The method of claim 15, wherein manipulating the value specified comprises at least one of:

increasing the specified value;
decreasing the specified value; and
removing the specified value from the abstract query.

17. (Previously Presented) The method of claim 15, wherein manipulating the specified value comprises at least one of:

removing a condition from the abstract query;
adding a condition to the abstract query; and
changing a condition with the abstract query.

18. (Original) The method of claim 12, wherein manipulating the abstract query is done with respect to a weight assigned to an element of the abstract query, the weight indicating a relative priority of changing the element relative to other elements in the abstract query.

19. (Previously Presented) A computer-implemented method of building queries, comprising:

providing a logical model stored in physical storage space and logically describing physical fields of physical data, the logical model comprising logical fields corresponding to respective physical fields, and wherein each logical field is defined by the logical model to include an access method describing a manner of accessing the corresponding respective physical field;

receiving an abstract query defined with respect to at least one logical field of the logical model and comprising a user-specified value for the at least one logical field and a result set criterion specifying at least a size of a desired result set; and

programmatically manipulating an element of the abstract query to produce a modified abstract query which, when executed, returns results; the manipulating being directed to satisfying the result set criterion with the returned results.

20. (Previously Presented) The method of claim 19, further comprising transforming, with reference to the logical model, the modified abstract query into a form consistent with the physical data.

21. (Original) The method of claim 19, wherein the at least one logical field has an associated value modification parameter defined in the logical model and wherein the manipulating comprises manipulating the user-specified value in a manner limited by the associated value modification parameter.

22. (Previously Presented) The method of claim 19, wherein the manipulating is performed iteratively until producing the modified abstract query which, when executed, returns results satisfying the result set criterion.

23. (Previously Presented) The method of claim 19, wherein manipulating the element comprises at least one of:

increasing the user-specified value;
decreasing the user-specified value; and
removing the user-specified value from the abstract query.

24. (Original) The method of claim 19, wherein manipulating the element comprises at least one of:

removing a condition from the abstract query;
adding a condition to the abstract query; and
changing a condition with the abstract query.

25. (Original) The method of claim 19, wherein manipulating the element is done with respect to a weight assigned to the element, the weight indicating a relative priority of changing the element relative to other elements in the abstract query.

26. (Previously Presented) A computer-implemented method for returning a specified result size set for a query, comprising:

(a) receiving a query comprising at least one condition, an associated value for the condition and a user-specified result~~s~~ criterion;

(b) changing a first element of the query to produce a modified query;

(c) running the modified query to produce a result set;

(d) if the result set does not satisfy the user-specified result~~s~~ criterion, changing one of the first element and a second element of the modified query to produce a different modified query; and

(e) running the different modified query to produce a different result set for output to a user; wherein the user-specified result criterion specifies a number of modified queries to be generated by changing the first or second element.

27. (Original) The method of claim 26, wherein changing either of the first element and the second element comprises at least one of:

increasing the associated value;
decreasing the associated value; and
removing the associated value from the query.

28. (Original) The method of claim 26, wherein changing either of the first element and the second element comprises at least one of:

adding a condition to the query;
removing the at least one condition from the query; and
changing the at least one condition with the query.

29. (Original) The method of claim 26, wherein changing either of the first element and the second element is done with respect to a weight assigned to the element, the weight indicating a relative priority of changing the element relative to other elements in the abstract query.

30. (Presently Presented) The method of claim 26, further comprising repeating (d) and (e) until the result set satisfies the user-specified result criterion.

31. (Presently Presented) The method of claim 26, wherein the user-specified result criterion is a result set size criterion.

32. (Previously Presented) The method of claim 26, wherein each generated query produces a result set size specified by the user-specified result criterion.

33. (Previously Presented) A computer readable storage medium containing a program which, when executed, performs an operation with respect to abstract queries and a logical model comprising a plurality of logical field definitions mapping to physical fields of physical data, the operation comprising:

receiving an abstract query defined with respect to at least one logical field of the logical model and comprising (i) a user-specified value for the at least one logical field and (ii) a result set criterion specifying at least a size of a desired result set; and

manipulating an element of the abstract query to produce a modified abstract query which, when executed in the form of a transformed physical query, returns results; the manipulating being directed to satisfying the result set criterion with the returned results; wherein the modified abstract query is defined with respect to the at least one logical field; wherein the transformed physical query includes a reference to at least one of the physical fields, the at least one physical field corresponding to the at least one logical field; and, wherein each logical field definition references an access method describing a manner of accessing a respective physical field.

34. (Previously Presented) The computer readable storage medium of claim 33, wherein the abstract query comprises a limitation parameter limiting the manipulating of the element.

35. (Previously Presented) The computer readable storage medium of claim 33, wherein the manipulating is performed iteratively until producing the modified abstract query which, when executed, returns results satisfying the result set criterion.

36. (Previously Presented) The computer readable storage medium of claim 33, wherein the at least one logical field has an associated element modification parameter defined in the logical model and wherein the manipulating is limited by the associated element modification parameter.

37. (Previously Presented) The computer readable storage medium of claim 33, wherein manipulating the element comprises at least one of:

increasing the user-specified value;

decreasing the user-specified value; and

removing the user-specified value from the abstract query.

38. (Previously Presented) The computer readable storage medium of claim 33, wherein manipulating the element comprises at least one of:

removing a condition from the abstract query;

adding a condition to the abstract query; and

changing a condition with the abstract query.

39. (Previously Presented) The computer readable storage medium of claim 33, wherein the manipulating is performed with respect to a weight assigned to the element, the weight indicating a relative priority of manipulating the element relative to other elements in the abstract query.

40. (Previously Presented) The computer readable storage medium of claim 33, wherein the physical data comprise a plurality of tables in a database.

41. (Previously Presented) The computer readable storage medium of claim 33, further comprising transforming, with reference to the logical model, the modified abstract query into the physical query.

42. (Previously Presented) A computer system, comprising memory and at least one processor, and further comprising:

a logical model stored in physical storage space and comprising a plurality of logical field definitions mapping to physical fields of physical entities of data, and wherein each logical field definition references an access method describing a manner of accessing a respective physical field, whereby the logical model provides a logical view of the data;

a processor; and

a runtime component which, when executed by the processor, is configured to at least (i) receive an abstract query comprising at least one condition with a reference to at least one of the logical field definitions, a value for the at least one logical field and at least one user-selected result size criterion specifying a desired result set size to be returned; and (ii) change an element of the abstract query in an effort to satisfy the desired result size criterion.

43. (Original) The system of claim 42, wherein the at least one of the logical field definitions comprises an attribute indicating that the element may be changed.

44. (Original) The system of claim 42, wherein the abstract query further comprises a limitation on an extent of permitted change to the element.

45. (Original) The system of claim 42, wherein the element is a value and wherein the abstract query further comprises a plurality of values, each for a different logical field definitions, and wherein the runtime component is configured to change each of the values to produce different permutations of the abstract query in an effort to satisfy the result size criterion.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.